El Nino Student Activity Book

I. Introduction

El Nino refers to the irregular increase in sea surface temperatures from the coasts of Peru and Ecuador to the equatorial central Pacific. This phenomenon is not totally predictable but on average occurs once every four years. It usually lasts for about 18 months after it begins.

Since March of 1997, sea surface temperatures in the central and eastern equatorial Pacific have been higher than normal. The sea surface temperature for September 1997 was the highest in the last 50 years. Also, in late September easterly winds over the equatorial Pacific between 150E and 120W decreased the most in the last 30 years.

Recent years in which El Nino events have occurred are 1951, 1953, 1957-1958, 1965, 1969, 1972-1973, 1976, 1982-1983, 1986-1987, 1991-1992, 1994 and 1997. The high sea surface temperatures and the magnitude of the westerly wind anomalies over the Pacific are very high. These conditions suggest that the strength of 1997 El Nino event could equal or surpass that in 1982-1983, making it the strongest El Nino this century.

The El Nino of 1982-83 was responsible for the loss of nearly 2,000 lives and displacement of hundreds of thousands from their homes. The losses were caused by droughts and fires in Australia, Southern Africa, Central America, Indonesia, the Philippines, South America and India. There were floods in the USA, Gulf of Mexico, Peru, Ecuador, Bolivia and Cuba. More hurricanes than usual affected Hawaii and Tahiti.

In this activity, you'll learn about El Nino. Specifically, you'll learn the information below as you do the activities.

Get Info Objectives

1. Explain what El Nino is, where it is located, and how it is created.
2. Describe the weather changes caused by El Nino.
3. Draw the patterns of El Nino on a world map.

Gather Data Objectives

1. List the years of previous El Nino events.
2. Locate and graph precipitation for locations in the eastern and western Pacific.
3. Analyze precipitation in eastern and western Pacific in terms of amount and when it occurred.
4. Compare precipitation amounts in the eastern and western Pacific to occurrences of El Nino.

Application Objectives

1. Predict the economic effects El Nino will have on the areas it affects.
2. Predict when the next El Nino will develop.
3. Predict what would happen to coastal areas of the Atlantic Ocean if El Ninos developed off the coast of Africa.